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Nevo et al.

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[54] REPAIR OF CARTILAGE AND BONES

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[56] References Cited

FOREIGN PATENT DOCUMENTS

36545 3/1983 Japan 623/66

OTHER PUBLICATIONS

"Bone Cell Differentiation and Growth Factors"; Urist

et al., *Science* (Washington, DC), 1983, 220 (4598), 680-6.

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[57] ABSTRACT

There are provided compositions for repairing defects of cartilage and bones. These are provided in gel form either as such, or embedded in natural or artificial bones. The gel comprises certain types of cells. These may be committed embryonal chondrocytes or any kind of mesenchyme originated cells which potentially can be converted to cartilage cells, generally by the influence of chondrogenic inducing factors, in combination with fibrinogen, antiprotease and thrombin. The cells ought to be of the species to which the composition is transplanted. It is advantageous to incorporate in the gel extracellular matrix (ECM) of chondrocytes or other hormones and/or growth factors such as SM (Somatomedin=IGF-I), FGF (fibroblast growth factor), CGF (cartilage growth factor), BDGF (bone derived growth factor) or a combination of any of these.

8 Claims, No Drawings